

15.(Original) The method of claim 1, wherein the oligonucleotide includes a phosphate backbone modification which is a phosphorothioate or phosphorodithioate modification.

16. (Original) The method of claim 15, wherein the phosphate backbone modification occurs at the 5' end of the oligonucleotide.

17. (Original) The method of claim 15, wherein the phosphate backbone modification occurs at the 3' end of the oligonucleotide.

18. (Original) The method of claim 1, wherein X₁X₂ are nucleotides selected from the group consisting of: GpT, GpG, GpA, ApA, ApT, ApG, CpT, CpA, CpG, TpA, TpT, and TpG; and X₃X₄ are nucleotides selected from the group consisting of: TpT, CpT, ApT, TpG, ApG, CpG, TpC, ApC, CpC, TpA, ApA, and CpA.

19. (Original) The method of claim 1, wherein the oligonucleotide has a sequence including at least the following formula:

5' TCNTX₁X₂CGX₃X₄ 3'

wherein X₁, X₂, X₃, and X₄ are nucleotides, N is a nucleic acid sequence composed of from about 0-25 nucleotides.

20. (Previously Presented) The method of claim 1, wherein the antigen is selected from the group consisting of cells, cell extracts, proteins, polypeptides, peptides, polysaccharides, polysaccharide conjugates, peptide mimics of polysaccharides, lipids, glycolipids, carbohydrates, allergens, viruses and viral extracts and parasites.

21. (Original) The method of claim 1, wherein the antigen is an allergen.

22. (Original) The method of claim 1, wherein the antigen is derived from an infectious organism selected from the group consisting of infectious bacteria, infectious viruses, infectious parasites, and infectious fungi.

23. (Original) The method of claim 1, wherein the subject is an asthmatic.

24. (Original) The method of claim 1, further comprising administering a cytokine to the subject.

25. (Original) The method of claim 1, further comprising administering a B-7 costimulatory molecule.

26. (Original) The method of claim 1, wherein the mucosal immunity is induced in a remote site.

27. (Original) The method of claim 1, further comprising administering a boost of the oligonucleotide.

28. (Original) The method of claim 8, further comprising administering a boost of the oligonucleotide and the non-oligonucleotide mucosal adjuvant.

125. (Previously Presented) The method of claim 3, wherein oligonucleotide is administered to a mucosal surface different from that at which the subject is exposed to the antigen.

126. (Previously Presented) The method of claim 1, wherein the oligonucleotide is administered by inhalation.

127. (Previously Presented) The method of claim 1, wherein the subject is exposed to the antigen by inhalation.

128. (Previously Presented) The method of claim 1, wherein the oligonucleotide is formulated for ocular administration, rectal administration, vaginal administration, intranasal administration or inhalation.

129. (Previously Presented) The method of claim 1, further comprising identifying a subject in need of a mucosal immune response.

130. (Previously Presented) A method for inducing a mucosal immune response, comprising:

administering to a mucosal surface of a subject an effective amount for inducing a mucosal immune response of an oligonucleotide at least 8 nucleotides in length, formulated for ocular administration, rectal administration, vaginal administration, intranasal administration or inhalation, and having a sequence including at least the following formula:



wherein C is unmethylated, wherein X_1 , X_2 , X_3 , and X_4 are nucleotides, and

exposing the subject to an antigen to induce the mucosal immune response, and wherein the antigen is not encoded in a nucleic acid vector.